CASE STUDY

Improvement in Quality of Life for Six Pregnant Patients Undergoing Chiropractic Care: The Promise of PROMIS

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Abstract

Introduction: The use of health-related quality of life (HRQoL) measures in chiropractic pregnant patients remains virtually non-existent. In this paper pregnant patients are characterized showcasing the use of the NIH PROMIS program to determine baseline HRQoL measures.

Methods: In addition to describing sociodemographic and clinical data, patient-centered outcomes measures utilizing the PROMIS-29 Profile V1.0 are demonstrated.

Results: Six pregnant patients (average age=33.33 years) with average parity at 0.33 and mean gestation of 20 weeks are described. Their primary caregivers were obstetrician/gynecologists, nurse-midwives and midwives. All were aware of concurrent chiropractic care. The patients presented with NMS complaints and for wellness care. The PROMIS scoring demonstrated the dynamic nature of the HRQoL domains in pregnant patients with improvements (i.e., fear/anxiety, pain interference and satisfaction with social roles) and decrements (i.e., physical functioning and sleep disturbance) in HRQoL domains.

Discussion: Evidence-informed practice expects that some aspect of chiropractic patients’ HRQoL measures will have demonstrable improvements. The use of PROMIS within a chiropractic Practice Based Research Network (PBRN) offers promise in this regard.

Conclusion: Pregnant patients attending chiropractic care within a PBRN are characterized using PROMIS HRQoL measures. The use of valid outcome measures to demonstrate chiropractic effectiveness should be further implemented in research and practice.

Keywords: Chiropractic, Practice Based Research Network, pregnancy, Health-related quality of life, PROMIS

Introduction

It has been estimated that approximately 76% of chiropractors practicing in the United States provide spinal manipulative therapy to pregnant women\textsuperscript{1,2} to address pregnancy-related NMS complaints\textsuperscript{1,3} and to some extent “wellness care.”\textsuperscript{4} Although health-related quality of life (HRQoL) measures have been commonly used in research on chiropractic patients receiving SMT,\textsuperscript{5,6} the use of HRQoL measures in the chiropractic care of patients during pregnancy remains virtually non-existent. To address this deficit, we describe the chiropractic care of pregnant patients using the National Institute of Health’s Patient Reported Outcomes Measurement Information System (PROMIS)\textsuperscript{7} PROMIS-29 Profile V1.0 as the main outcome for HRQoL measure.

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Methods

The case series described here was derived from an observational study to determine the quality of life and patient satisfaction of pregnant patients attending chiropractic care using the Webster Technique within a practice-based research network. The study was approved by the Institutional Review Board of Life University (Atlanta, GA, USA). In addition to sociodemographic information and the nature of their presenting complaint, the baseline and comparative measure using PROMIS-29 Profile V1.0 was evaluated.

The PROMIS-29 profile instrument is a 29-item questionnaire and is a collection of profile short forms (i.e., 4 items in length) that contains items from one of seven primary PROMIS health-related quality of life (HRQoL) domains. Domains of depression, anxiety, physical function, pain interference, fatigue, satisfaction with social roles and activities, and satisfaction with participation in social roles are included.

Scoring of the PROMIS-29 utilized the Assessment CenterSM, a free online research management tool that enables researchers to create study-specific web sites for capturing and analyzing participant data securely. For each HRQoL domain, the raw scores are converted to T-scores. The T-scores are rescales of the raw score into a standardized score with a mean of 50 (i.e., based on responses to the same questions by the general population in the United States) and a standard deviation (SD) of 10. Therefore a person with a T-score with respect to a particular domain (i.e., anxiety/stress) of 40 is one SD below the mean.

Results

The 6 pregnant patients (average age=33.33 years) presented at an average parity of 0.33 (range 0-1) and at a mean gestation of 20 weeks. Their primary caregivers were an obstetrician/gynecologist (N=2), a nurse-midwife (N=2) and midwife (N=2). All primary caregivers were aware that the patients were concurrently receiving chiropractic care. The patients indicated suffering from neck pain (N=1), leg pain (N=1), low back pain (N=2), low back pain and upper extremity/shoulder pain (N=1) and wellness care (N=3).

Baseline and comparative T Scores are provided in Table 1. In 4 of the 6 patients, improvements in various domains were observed more often than a decrement in 4 versus 2 patients. Interestingly, pain interference was observed as the most common improvement in a majority of the patients along with fear and anxiety. Two patients demonstrated a decrement in a majority of HRQoL domains.

The dynamic nature of the HRQoL domains in pregnant patients is demonstrated given the observed improvements (i.e., fear/anxiety, pain interference and satisfaction with social roles) and decrements (i.e., physical functioning and sleep disturbance) in HRQoL domain within each patient. Only one patient improved in the depression/sadness domain. The majority maintained the same score such that they were more depressed/sad than 20% of the US population.

Discussion

The use of CAM during pregnancy has been estimated to range from 13% to 78%. The popularity of CAM therapies is reflected in the recent study by Sibbritt et al. The investigators found that of 535 women surveyed, 20.7% consulted with a CAM practitioner at least once in the 12 months prior to the survey with 66.7% consulting prior to their pregnancy and 55.0% continued to consult with a CAM practitioner after the pregnancy.

The motivation for chiropractic care by the patients described in this case series confirm previous findings pregnant women use CAM to treat a particular health problem/condition pregnancy-related conditions (i.e., low back pain) or just to stay healthy or well, or both. Rather than replace conventional pregnancy management, CAM therapies are said to augment medical care with the perceptions that alternative therapies provides a safer alternative to pharmaceuticals. It’s estimated that 50% to 70% of women experience some degree of LBP during pregnancy and the commonality of pregnancy-related NMS complaints in this case series confirms this.

With demonstrated effectiveness for NMS complaints, a safety record in pregnancy care, and a patient-centered paradigm, chiropractic is an attractive approach to care during pregnancy. Indeed, this case series confirms the popularity of chiropractic care in this patient population. Given the popularity of medical pluralism, the integrative approach to pregnancy care is demonstrated in this case series with all patients indicating that their primary caregiver was aware of the use of chiropractic services.

In this era of evidence-informed practice, the expectations among chiropractic patients is that some aspect of their physical functioning, mental and emotional well-being, social and role functioning, self-perceptions of general health, pain, energy, and vitality will improve. No more is this true for pregnant patients given that HRQoL domains during pregnancy are depressed.

A number of reliable and validated HRQoL measures have been implemented in studies involving pregnant women. These include ratings of pain intensity, the Disability Rating Index and the Nottingham Health Profile, the Katz's Activity's Daily Living Index (ADL), Short Form of WHO Quality of Life Questionnaire (WHOQOL-BREF) and the Oswestry Low Back Disability Questionnaire (OSW), and the ubiquitous the SF-12 and SF-36. To the best of this author’s knowledge, this is the first use of the PROMIS® HRQoL measures as an outcome measure among chiropractic pregnant patients.

PROMIS® is a system of highly reliable, precise measures of patient–reported health status for physical, mental, and social well-being regardless of presenting complaint. In the study reported, the PROMIS®,v29 was utilized as a baseline measure in our practice-base study to eventually determine some measure of effectiveness of chiropractic treatment.

The uniqueness of PROMIS® lies in four key areas: Comparability (i.e., measures have been standardized so there
are common domains and metrics across conditions, allowing for comparisons across domains and diseases), reliability and validity (i.e., all metrics for each domain have been rigorously reviewed and tested), flexibility (i.e., PROMIS can be administered in a variety of ways, in a different forms and inclusiveness (PROMIS encompasses all people, regardless of literacy, language, physical function or life course. The clinical and research utility of PROMIS has been demonstrated in this case series.

**Conclusion**

Pregnant patients attending chiropractic care within a PBRN are characterized along with the use of the PROMIS-29 Profile V1.0 to measure HRQoL measures. The use of valid outcome measures such as PROMIS to demonstrate chiropractic effectiveness of care should be further investigated/implemented in practice and research.

**References**

Table 1. Scoring for health-related quality of life domains using PROMIS.

<table>
<thead>
<tr>
<th>HRQoL Domain</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear/Anxiety</td>
<td>40/40</td>
<td>54/40</td>
<td>Ψ51/48</td>
<td>Ψ51/40</td>
<td>40/40</td>
<td>40/40</td>
</tr>
<tr>
<td>Depression/Sadness</td>
<td>41/41</td>
<td>41/41</td>
<td>41/41</td>
<td>49/41</td>
<td>41/41</td>
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</tr>
<tr>
<td>Fatigue</td>
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<td>57/49</td>
<td>Ψ43/49</td>
<td>Ω49/49</td>
<td>49/49</td>
<td>63/55</td>
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<td>Pain Interference</td>
<td>54/42</td>
<td>54/42</td>
<td>Ψ57/50</td>
<td>Ψ61/59</td>
<td>Ψ56/61</td>
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<td>Physical Function</td>
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<td>45/57</td>
<td>Ψ57/42</td>
<td>Ω42/48</td>
<td>48/42</td>
<td>57/31</td>
</tr>
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<td>Satisfaction with Social Roles</td>
<td>40/45</td>
<td>40/43</td>
<td>Ψ45/48</td>
<td>Ψ43/37</td>
<td>40/40</td>
<td>43/42</td>
</tr>
<tr>
<td>Sleep Disturbance</td>
<td>54/56</td>
<td>60/46</td>
<td>Ψ48/46</td>
<td>44/44</td>
<td>52/51</td>
<td>32/48</td>
</tr>
</tbody>
</table>

Ψ = improvement in domain
Ω = decrement in domain